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THE
ONTARIO WATER RESOURCES
COMMISSION
WATER POLLUTION SURVEY
of the
TOWN OF LATCHFORD
DISTRICT OF TIMISKAMING

1966

TOWN OF LATCHFORD - 1966
DISTRICT OF TIMISKAMING

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Report

on a

Water Pollution Survey

of the

TOWN OF LATCHFORD

District of Timiskaming

November 1966

Division of Sanitary Engineering

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ONTARIO WATER RESOURCES COMMISSION

R E P O R T

I INTRODUCTION

The purpose of this survey was to locate and record significant sources of water pollution within the Town of Latchford. Surveys of this nature are conducted routinely and upon request throughout the Province of Ontario by the Ontario Water Resources Commission. This forms a basis for evaluating any existing or potential sources of pollution.

Recommendations are made pertaining to water pollution abatement, and the Commission expects that corrective measures will be taken by those concerned.

Where water and pollution control works appear desirable or expansions to present facilities are necessary, the Ontario Water Resources Commission (OWRC) has a programme to aid in the construction and financing of these works. The Commission also sponsors courses for plant operators, to assist them in the operation and maintenance of water pollution control facilities and water works.

II GENERAL

(1) Location

The Town of Latchford has a population of 452 (1966 Municipal Directory). It is located in the District of Timiskaming on Highway No. 11 beside the Montreal River, seven miles south of the Town of Cobalt.

(2) Topography

Drainage from the town enters a marshy area at the north end of Bay Lake and along the east shoreline. Bay Lake discharges to the Montreal River which flows in a southerly direction to the Ottawa River.

The overburden in the area ranges from 0 to 30 feet. Rock outcrops occur in the northern portion of the town with a slight increase in depth of the overburden in the southern, more developed area. The type of overburden varies from clay, sand, or sand and gravel over bedrock.

There is no industry in town at the present time. The commercial area of the town consists of one general store, two grocery stores, three service stations and two restaurants.

At one time there were extensive lumbering operations and the population approached 5,000. The town apparently developed on small building lots.

III WATER USES

(1) Water Supply

There is no municipal water system. The residents obtain water from privately-owned dug and drilled wells. Some residents haul water by hand from the Montreal River and use it untreated for domestic purposes.

The Ontario Northland Railway pumps its water supply from the Montreal River. The B.P. Service Station reportedly is also serviced by the O.N.R. supply.

A local resident, Mr.W. Boyce provides water to several premises by a pumped supply from Bay Lake.

No treatment is presently provided to either piped supply. Due to small lots and the proximity of individual septic tank systems to private wells adverse bacteriological water quality has been experienced in many of the wells over the past years. The recent laboratory results of samples taken for bacteriological examination from private water supplies in Latchford by the Timiskaming Health Unit confirmed coliform counts in 61 per cent of the samples collected in the period from January to September 1966.

Presently the health unit is doing a complete house to house survey of existing water supply and waste disposal facilities. The completed sampling results will be available for further reference.

Acting on the municipality's request (for the development of a proposal) for the OWRC to construct certain water works, our Division of Project Development placed information before the Commission. The Commission has authorized staff to engage a consulting engineer to prepare a feasibility report on the water supply requirements of the municipality.

(2) Recreational

Bay Lake is used extensively for boating, swimming and fishing and Montreal River reportedly provides good fishing.

IV WATER POLLUTION

(1) Sanitary Waste Disposal

Private sewage disposal systems are utilized. There was no supervisory authority for the inspection of the installation of these systems. The Timiskaming Health Unit has recently expanded its services to include this area, and are presently doing a sanitary survey of the town. The initial observations by the health unit indicate that approximately 70 per cent of the town depend on privies for sanitary waste disposal and the remaining 30 per cent are served by septic tank and tile bed. However, more accurate information will be available pending the receipt of the completed health unit survey. The suitability of individual lots to affect the necessary repairs to malfunctioning septic tank systems or installing new private sewage disposal systems will be determined during the sanitary survey.

(2) Proposed Sewage Works

A preliminary report of the water and sewage facilities for the Town of Latchford was completed by field staff of this Commission in 1965. Subsequent requests for consideration of developing of the sewage works by the Commission have not received authorization to proceed.

V DISCUSSION OF SAMPLE ANALYSES

Samples were collected from local watercourses and from the surface waters of Bay Lake and Montreal River, which adjoin the town. The location of the sampling points are shown on the enclosed map and

the results of the samples submitted for laboratory analyses are recorded in Table No. 1 which is appended to this report.

All of the results of the bacteriological examinations were within the OWRC objective for surface waters of not greater than 2,400 coliforms per 100 ml. The results of the chemical analyses were within Commission objectives for BOD, (biochemical oxygen demand) and suspended solids concentration. The remaining chemical analyses were indicative of acceptable alkalinity, hardness, iron and chloride concentrations, and pH for surface waters in the Province of Ontario.

It should be noted that these satisfactory results are based on grab samples taken and conditions noted at the time of the investigation. An appraisal of the significance of these analyses should be governed by the fact that regular monitoring of these sampling point locations would provide a more complete picture.

Where surface waters are used for a drinking supply the OWRC recommends a minimum treatment of chlorination. Although enforceable regulations concerning chlorination are only applicable to communal water distribution systems, ingestion of this untreated surface water offers no margin of protection from isolated contamination which may occur.

Although the laboratory analyses of the samples submitted indicated a relatively low coliform density, BOD and suspended solids concentration, some consideration of pertinent local conditions is indicated.

Due to the small lots, the soil conditions and local drainage conditions the eventual water pollution potential is imminent. The predominance of the use of privies for sanitary waste disposal and the absence of available piped water supply minimizes surface-water pollution problems. The present conditions constitute unsanitary conditions of public health significance and are more conducive to ground water well pollution. The ultimate solution to the problem of providing a potable water supply for the town will be the completion of a municipal water works. The consulting engineers' feasibility report on the water requirements for the town, is the initial step in this water works programme.

Assuming the eventual availability of municipal water and the resulting sewage from newly constructed sanitary fixtures that will result, the installation of adequate sewage disposal facilities will be necessary in order to assure continued satisfactory surface-water quality.

The suitability of individual lots for private sewage disposal systems will be assessed in the health survey. The necessity of further consideration of a sewage works proposal should be reviewed when the complexity of providing adequate approved private sewage disposal systems is affirmed. In this regard the public health significance of present and potential unsanitary conditions should be discussed with the Timiskaming Health Unit and the municipality should accept the remedial measures recommended by the Medical Officer of

Health.

VI SUMMARY AND CONCLUSIONS

A water pollution survey was conducted in the Town of Latchford on September 13, 1966. The results of the laboratory analyses of samples indicated that the water was within the Commission objectives for surface waters in the Province of Ontario. Further sampling in order to establish any variations is a prerequisite for a reliable water-quality assessment.

Private sewage disposal systems are reportedly contributing to private well pollution and unsanitary conditions. The installation of the proposed water works will necessitate the installation of adequate sewage disposal facilities. If private sewage disposal systems cannot be approved due to lot suitability, the appropriate method of controlling water pollution and unsanitary conditions is a municipal sewerage system.

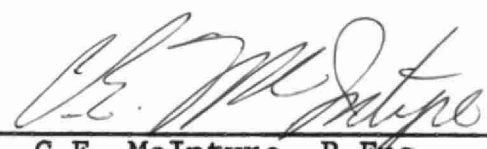
VII RECOMMENDATION

1. The Town of Latchford should adopt a procedure where all installations and alterations of private sewage disposal systems should comply with the Timiskaming Health Unit requirements.

/elc

Prepared by:
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Approved by


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Div. of Sanitary Engineering.

APPENDIX

EXPLANATION AND SIGNIFICANCE OF LABORATORY ANALYSES

(A) Bacteriological examinations were performed on samples from the watercourse. The Most Probable Number technique was used to obtain an enumeration of coliform and Escherichia coli organisms. These organisms are normal inhabitants of the intestines of man and other warm blooded animals. They are always present in sewage and are generally minimal in other pollutants. The results of the examinations are reported as Coliform and E.coli count per 100 c.c.

The Commission's objective for surface waters in Ontario is a coliform count of not greater than 2,400 organisms per 100 c.c.

(B) Chemical Analysis

The chemical analysis performed on stream and outfall samples included determinations for biochemical oxygen demand, suspended solids and in some instances, turbidity.

(I) Biochemical Oxygen Demand (BOD)

Biochemical Oxygen Demand is reported in parts per million (ppm) and is an indication of the amount of oxygen required for stabilization of decomposable organic matter present in sewage, polluted waters, or industrial wastes. The completion of the test requires five days under the controlled incubation temperature of 20°C. The Commission's water quality objectives

- (i) for surface waters - a 5-Day BOD of not greater than 4 ppm.
- (ii) for storm sewer, sewage treatment plant and industrial waste discharges - a 5-Day BOD of not greater than 15 ppm.

(II) SOLIDS

The laboratory does tests to determine the total and suspended solids in a sample. The value for dissolved solids is determined by taking the mathematical difference between the total and suspended solids.

The concentration of suspended solids expressed in parts per million (ppm) is generally the most significant of the solids analysis in regard to stream water and outfall discharge qualities.

The OWRC objective for a discharge is a suspended solids concentration of not greater than 15 ppm.

(III) TURBIDITY

Turbidity is caused by the presence of suspended matter such as clay, silt, finely divided organic matter and plankton and is an expression of the optical property of a sample. The results are reported in "Silica Units".

SAMPLE ANALYSES

Membrane Filter

[illegible]



LEGEND

- - OUTFALL
- L-3 - STREAM SAMPLING POINT
- B-2 - LAKE SAMPLING POINT

ONTARIO WATER RESOURCES COMMISSION			
TOWN OF LATCHFORD WATER POLLUTION SURVEY 1966			
SCALE:	400	200	0 400 FEET
DRAWN BY:	L.L. BROOME	DATE:	NOV., 1966
CHECKED BY:	D.C.	DRAWING No:	66-82